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BRIEFER ARTICLES.

POTAMOGETON ROBBINSII.

(WITH PLATE XV)

THIS pondweed, first described by Oakes in 1841, is the rarest of the North American species to fruit, unless we except *P. interruptus* Kitaibel, which bears floral spikes quite freely, but is not known to mature fruit in this country, though it does in Europe. The principal mode of propagation of *P. Robbinsii* is by fragments of the stems, which root freely in the muddy bottoms of ponds and lakes where it grows, often forming dense patches covering considerable areas. Dr. Thomas Morong writes with regard to its fruiting as follows: "Very rarely, in years when the waters are low, the flowering spikes rise above the surface and perfect a few fruits. Dr. Robbins never saw but one fruit, which was collected many years ago in Oregon by Hall, and this was split in two, Prof. D. C. Eaton taking one half and Dr. Robbins the other. In the year 1880 Mr. Faxon had the good fortune to secure a few fruiting specimens in Jamaica Pond, Massachusetts. Besides them I have never known another instance, although the plant is very prolific in the localities where it occurs."¹

It was my good fortune in 1889 to find it fruiting in the Chesago lakes, Centre City, Minnesota, and a number of specimens were secured. This was in early September. Twice before during the same season plants were collected in the latter part of July in northern Michigan, at Republic, and in Goose lake near Negaunee. The specimen from Republic has a spike of fruit well formed, but immature. The superiority of the fruiting plants from the Chesago lakes, compared to those hitherto figured, has led me to have the accompanying plate prepared. It very accurately represents the average of the fruiting or upper parts of the stem, the lower very leafy portion, or that of barren shoots, not being represented. The specimens show an inflorescence loosely paniculate, the fruiting portion of the stems being 10 to 15^{cm}

¹ The Naiadaceæ of North America, Mem. Torr. Bot. Club 3: 54. 1893.
1898]

long, generally with four to nine or ten spikes. Some spikes get no farther than the floral stage. On others from three to six nutlets ripen, part of the flowers on them being aborted. One stem with eleven spikes in various stages of development had seven with perfect fruit, though not fully grown in all, aggregating about twenty-five nutlets. The largest number on a single spike is six. The spikes are 2-3^{cm} long, on slender diverging or erect-spreading grooved and angled peduncles, which are 3-7^{cm} (mostly 3-4^{cm}) long. The nutlets are 3-4^{mm} long by 2.5-3^{mm} wide. They are brown to reddish-brown in color, the surface minutely roughened under a lens. They are three-keeled on the back, the prominent middle keel having a thin, sharp, slightly angled margin. There is a shallow central depression on each side, circular, or a little elongated longitudinally, with a diameter about one-third that of the body of the nutlet. The plants grew in shallow water, the upper parts of the inflorescence usually protruding above the surface. I am indebted to Mrs. Agnes Chase of Chicago for the drawings, which faithfully represent the specimens.—E. J. HILL, *Chicago*.

EXPLANATION OF PLATE XV.

FIG. 1. Upper portion of a fruiting stem, natural size.

FIG. 2. Fruit enlarged ten diameters.

FIG. 3. Section of fruit, showing embryo, enlarged ten diameters.

WYOMING JUNIPERS.

THE junipers of Wyoming, while not numerous, are interesting. Until recently these have been assumed to be all of one species, *Juniperus Virginiana* L. The common Rocky mountain form of this has recently been segregated by Dr. C. S. Sargent under the name of *J. scopulorum*. This species seems to require two years to mature its fruit, this fact being one of the points upon which, as I believe, this good species is founded.

Some other species of Rocky mountain juniper were known to be common in neighboring states, *J. occidentalis* Hook. to the northwest, *J. Californica Utahensis* Eng. to the west, and *J. occidentalis monosperma* Eng. to the south. That one or more of these may yet be found within the borders of this state is quite probable; in fact, when during 1897 a



HILL on POTAMOGETON ROBBINSII.